

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE CLAIMS

Claims 1, 7, 8, 9 and 15 have been amended to make minor clarifying amendments.

Specifically, claim 1 has been amended to clarify that the aperture device has a variable aperture value which can be modified in both an ascending and descending manner, and that the aperture device can be driven to change the variable aperture value in either the ascending or descending manner while maintaining the desired focal length value.

In addition, claim 9 has been amended to specifically recite two moving lens group frames and two lens driving cams, and claim 9 has also been amended in a manner similar to claim 1 to recite that the aperture device has a variable aperture value which can be modified in both an ascending and descending manner, and that the aperture device can be driven to change the variable aperture value in either the ascending or descending manner when the moving lens group frames are in a state of not being displaced in the optical axis direction.

Still further, claims 7, 8 and 15 have been amended to delete the recitation that the single driving source drives in

one direction only.

No new matter has been added, and it is respectfully requested that the amendments to the claims be approved and entered.

THE PRIOR ART REJECTION

Claims 1-8 were rejected under 35 USC 102 as being anticipated by USP 6,134,053 ("Kabe et al") and claims 9-15 were rejected under 35 USC 103 as being obvious in view of the combination of Kabe et al with USP 5,576,892 ("Hotta et al"). These rejections, however, are respectfully traversed.

As pointed out hereinabove, according to the present invention as recited in amended claim 1, the aperture device can be driven to change the variable aperture value in either the ascending or descending manner while maintaining the desired focal length value. And according to the present invention as recited in amended claim 9, the aperture device can be driven to change the variable aperture value in either the ascending or descending manner when the moving lens group frames are in a state of not being displaced in the optical axis direction.

Thus, according to the present invention as recited in amended claims 1 and 9, it is possible to quickly and efficiently set an arbitrary aperture value at predetermined focal length position.

In Kabe et al, by contrast, if it is desired to change the aperture value, the lens mount 26 must be moved to a predetermined position, for example, to the position of the diaphragm driving plate 43 or 44 to reset the diaphragm. In addition, the lens frame 26 must be moved to the position of the diaphragm driving plate 74 shown in Fig. 5. That is, in Kabe et al, if it is desired to change the aperture value of the lens frame 26 at a focal length position he desires in the middle of the cam 71, in other words, between the insensitive zones 72 and 73 in Fig. 5, the lens frame 26 must be moved to the position of either the insensitive zone 72 or the insensitive zone 73. Then, after having moved the lens frame 26 to the position of either the insensitive zone 72 or the insensitive zone 73, the aperture value is changed and then the lens frame 26 is returned to the desired original focal length position. As a result, in the optical apparatus of Kabe et al, redundant time may be required to change the aperture value at a desired focal position, and it may not be possible to cope with external light which changes with the passage of time. In other words, in Kabe et al, it may not be possible to select the aperture value at the desired focal length position. Also, in the insensitive zone in every drawing of Kabe et al, if the aperture value is once set, it may occur that it is required to move the lens frame to another insensitive zone in order to change the aperture value.

According to the structure of the claimed present invention as recited in amended claim 1, the aperture device can be driven to change the variable aperture value in either the ascending or descending manner while maintaining the desired focal length value. And according to the present invention as recited in amended claim 9, the aperture device can be driven to change the variable aperture value in either the ascending or descending manner when the moving lens group frames are in a state of not being displaced in the optical axis direction. Thus, although the aperture value can not be opened/closed at any continuous arbitrary focal length position, the aperture device can be opened/closed both in the opening direction and in the closing direction at respective positions of the predetermined focal length positions. In other words, it is possible to determine the aperture value at a specific focal length position.

By contrast, in Kabe et al, if it is attempted determine the aperture value at an arbitrary focal length position, the lens frame must be moved from the arbitrary position to the specific position and the aperture value is set at the specific position, and after that, the lens frame must be moved while keeping the aperture value to the arbitrary focal length position. Then, in a certain focal length position (insensitive zone), although it is possible to set the aperture value in the insensitive zone, it

is only possible to change the aperture value in either the closing direction or the opening direction of the diaphragm. In other words, if the aperture is once determined in this insensitive zone, it is necessary to move to another focal length position to make a change thereof.

It is respectfully pointed out, moreover, that as can be seen from the description beginning at column 11, line 20 of Kabe et al, it is required to reset the lens at the initial position without fail when changing the aperture value, which "teaches away" from the structures of the claimed present invention.

In view of the foregoing, it is respectfully submitted that the present invention as recited in amended claims 1 and 9, as well as each of claims 2-8 and 10-15 respectively depending therefrom, patentably distinguishes over Kabe et al, taken singly or in combination with any of the other prior art references of record, under 35 USC 102 as well as under 35 USC 103.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

Application No. 09/989,516  
Response to Office Action

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,



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